IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF MICHIGAN

BRANDI CRAWFORD-JOHNSON, ET AL., on behalf of themselves and all others similarly situated,

     Plaintiffs,

vs.

GRAPHIC PACKAGING INTERNATIONAL, LLC,

     Defendant.

Case No. 1:20-cv-00842-RJJ-SJB

HON. ROBERT J. JONKER

ORAL ARGUMENT REQUESTED

DEFENDANT'S MOTION TO EXCLUDE
DR. MARK CAL PURSUANT TO FED. R. EVID. 702

Plaintiffs disclosed Dr. Mark P. Cal as an expert in support of their Motion for Class Certification. Defendant Graphic Packaging International, LLC ("GPI") moves this Court to exclude Dr. Cal's opinions, as articulated in his "Preliminary Report for Class Certification" and deposition testimony. Dr. Cal's opinions fail to meet the standards of reliability and relevance under Fed. R. Evid. 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) and are therefore inadmissible.

GPI fully articulates the grounds for this Motion in the attached supporting memorandum of law.

Dated: October 25, 2024

Respectfully submitted,

BARNES & THORNBURG LLP

*Attorneys for Defendant Graphic Packaging
International, LLC*

/s/ Charles M. Denton
Charles M. Denton (P33269)
Anthony C. Sallah (P84136)
171 Monroe Avenue, NW, Suite 1000
Grand Rapids, MI 49503
Phone: (616) 742-3930
Facsimile: (616) 742-3999
cdenton@btlaw.com
asallah@btlaw.com

-and-

Mark P. Miller
One North Wacker Drive, Suite 4400
Chicago, IL 60606-2833
Phone: (312) 357-1313
Facsimile: (312) 759-5646
mmiller@btlaw.com

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

INDEX OF EXHIBITS

Ex.	Description
1	Expert Report of Dr. Mark P. Cal
2	Expert Report of Mr. Suresh Relwani
3	Expert Report of Mr. Ranjit Machado
4	EGLE, "Inverse Modeling of Hydrogen Sulfide in Kalamazoo Based on Monitoring Data" (May 7, 2024)
5	EGLE, "Modeling of H_2S Emissions and Impacts for the City of Kalamazoo" (Aug. 28, 2024)
6	Jones & Henry Odor Study for the Kalamazoo Water Reclamation Plant
7	Excerpted "Data Sheets"
8	Excerpts of Deposition of Dr. Mark Cal
9	Excerpts of Deposition of Mr. Ranjit Machado
10	Excerpts of Deposition of Mr. Suresh Relwani
11	Expert Report of Dr. Mark P. Cal in *Crocker v. Cleveland-Cliffs Steel Corp.*, No. 2:21-cv-11937-VAR-CI (E.D. Mich.)
12	Excerpts of GPI's Responses to Plaintiffs' First Set of Interrogatories

INTRODUCTION

Plaintiffs allege that hydrogen sulfide (H_2S) odors solely from GPI's plant have constituted a nuisance in the proposed class area since 2017. Plaintiffs' sole expert, Dr. Mark Cal, ***concedes*** that his report contains material errors and that he created an inaccurate historical theoretical model of alleged odors and their alleged dispersion from GPI's facility. Those admitted errors, plus other errors he has yet to acknowledge, render his opinions about GPI's facility incurably unreliable. Dr. Cal also failed to account for other well-known odor sources, particularly the Kalamazoo Water Reclamation sewage plant that abuts GPI. His report is unhelpful to the Court's decision whether to certify Plaintiffs' proposed class. Because Plaintiffs cannot satisfy their burden to prove Dr. Cal's report meets all the critical elements of Rule 702 and *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993), the Court should exclude Dr. Cal's report and testimony.

BACKGROUND

I. Odor Measurement Fundamentals

Odor experts use several accepted methods to measure odors, such as dynamic olfactometry. This method uses an "olfactometer" to analyze odor in the field. Ex. 3 at 14-15. The device pulls odorants towards a trained examiner's nose until she can smell the odorant. *Id.* at 15. The examiner then uses the olfactometer to dilute the odorant with clean air at intervals (one dilution, two dilutions, *etc.*) until the odor is undetectable. *Id.* The number of dilutions required until the examiner can no longer detect the odor is represented in a ratio, expressed as a dilution-to-threshold (D/T) or as odor units (OU).[1] *Id.* For example, a ratio of 5 D/T or 5 OU means that five dilutions of "clean" air are required to dissipate one sample of "odorous" air. The higher the ratio, the more intense the odor.

---

[1] Odor experts use "OU" and "D/T" interchangeably. *See, e.g.,* Ex. 2 at 10.

II.   AERMOD Modeling Software

AERMOD is a regulatory air dispersion model, developed by the United States Environmental Protection Agency ("EPA"). EPA uses AERMOD software in air permitting to conservatively *predict* how various emissions will disperse over a given geographical area from an industrial source. *Id.* at 21. AERMOD is ill-suited for reconstructing historical emission dispersion, and even more poorly suited for evaluating whether (and the extent to which) a specific person in a specific location was exposed to emissions. *Id.* Moreover, the validity of AERMOD's outputs depends on user inputs, "including emission rates, emission source configuration, meteorology, and elevation data[.]" *Id.* at 10; *see also* 82 Fed. Reg. 5182, 5209. In other words: garbage in, garbage out.

III.   Dr. Cal's "Methodology," Opinions, and Admitted Errors

Dr. Cal claims to be an expert in atmospheric dispersion modeling. Ex. 3 at 21. Dr. Cal is the expert-of-choice for Plaintiffs' counsel in odor nuisance cases, often offering unhelpful opinions on AERMOD's capabilities at the class certification stage. *See, e.g.*, *Sines v. Darling Ingredients Inc.*, 2023 WL 3841741, *6 (D.N.J. June 6, 2023) (excluding Dr. Cal's report as unreliable and unhelpful); *Brown v. WellPet LLC*, 2023 WL 3483935, *20 (N.D. Ind. Mar. 31, 2023) (Dr. Cal's report was "of no assistance" in evaluating the class definition); *Thornburg v. Ford Motor Co.*, 2022 WL 4348475, *5 (W.D. Mo. Sept. 19, 2022) (similar).

Plaintiffs' counsel retained Dr. Cal here to "analyze the impacts of nuisance-level odors," *i.e.*, from hydrogen sulfide (H_2S) emissions, "on the community near [GPI's facility.]" Ex. 1 at 2. His report purports to explain how "odors from the GPI facility likely dispersed within the proposed class area" during the relevant class period from 2017 to the present. *Id.*

In his report, Dr. Cal does not use AERMOD as it was intended—*i.e.*, to predict *future* dispersion of odor emissions. Instead, he uses it to model historical dispersion of H_2S odors

2

through the proposed class area, based on his bald-faced assumption that all of the odors came solely from GPI's facility. Dr. Cal claims that AERMOD can "model odors like other gaseous emissions …. [U]sing appropriate input data, [AERMOD] can determine when other odor threshold exceedances may occur within a modeled geographic area." *Id.* at 7. Further, he claims AERMOD can investigate "[m]ultiple sources … within the same model," with the option to demonstrate "their contribution to overall pollutant concentrations within a geographic region." *Id.* Dr. Cal, however, assumed GPI was the *only* source of odors for his theoretical AERMOD model. Ex. 8 at 120:13-22.

Dr. Cal's input data for his model included historical weather data and odor data. The sole odor data he used were odor measurements taken by environmental engineering firm RK & Associates ("RKA") as part of its 2020 odor study. *Id.* RKA used dynamic olfactometry to measure odor dilution thresholds at and around GPI's facility during July-September 2020. Ex. 2 at 3. Dr. Cal erroneously used and manipulated the RKA odor data, to produce an admittedly-inaccurate model, which drastically overstates odor concentration.

To "corroborate" his model, Dr. Cal cited May 2021 data from Kalamazoo's community H_2S monitoring system, claiming it "supports that residents throughout the proposed class area were exposed to elevated H_2S emissions from the GPI Facility." Ex. 1 at 12. After reviewing GPI's experts' reports, however, Dr. Cal admitted that his report's model contains serious errors and that it **inaccurately** depicts GPI's theoretical past odor emissions. Ex. 8 at 143:24-145:17.

IV.   Known Multiple Sources of Kalamazoo Odors and H2S Emissions

Studies conducted by the City of Kalamazoo and the Michigan Department of Environment, Great Lakes, and Energy ("EGLE"), confirm multiple sources of H_2S and other odors pervade the proposed class area, especially from the City of Kalamazoo's Water Reclamation sewage plant ("KWRP"), which directly abuts the GPI facility. See, e.g., Ex. 6 (odor study commissioned by KWRP).

In May 2024, EGLE published its report evaluating H2S dispersion in residential areas around GPI and KWRP. Ex. 4 at 1. EGLE employed an "inverse modeling" methodology (not AERMOD) to estimate H2S fugitive emissions from several significant sources,[2] including KWRP and Kalamazoo's sewer lines. Id. EGLE found that "[t]he top three stationary sources of H2S emissions west of the Kalamazoo River" (where GPI and KWRP are located) were all from KWRP operations. Id. (emphasis added). EGLE found that the total emissions of H2S from KWRP were "more than ten times greater than total emissions of H2S from [GPI]." Id. As for emissions to the east of the Kalamazoo River, EGLE found that "[e]missions of H2S from the Spring Valley underground sewer line … may exceed emissions from KWRP and GPI west of the river." Id. Around the entire area, EGLE found that "[d]iesel engine emissions of H2S in Kalamazoo are competitive with fugitive emissions from KWRP and GPI." Id.

In August 2024, EGLE finished another emissions study, in which they created AERMOD models to predict H2S odor dispersion throughout the Kalamazoo vicinity. Ex. 5 at 19-20. EGLE *again* found that "[r]egular H_2S emissions from GPI do not by themselves result in concentrations above the odor threshold outside [GPI's property]." *Id.* at 21.

---

[2] Dr. Cal is inexperienced with EGLE's inverse modeling method. Ex. 8 at 76:5-12.

V.   GPI's Experts' Opinions

Suresh Relwani is a principal engineer at RKA and author of the 2020 odor study upon which Dr. Cal relied for his odor input data. EGLE hires Mr. Relwani to train its staff in proper odor detection and evaluation. Ex. 10 at 28:23-29:9. Based on decades of experience in olfactometry and air dispersion modeling, Mr. Relwani found that Dr. Cal's report contains numerous errors, including his improper use of RKA's odor data, and that his opinions "lack any scientific validity." Ex. 2 at 10-12.

Similarly, Ranjit Machado, an environmental engineer with decades of air dispersion modeling experience, concluded that Dr. Cal's modeling analysis "lacks foundation, applies flawed input data, and is not validated." Ex. 3 at 6. Mr. Machado testified that Dr. Cal's analysis is so flawed that his model's error rate is "boundless" and his report is incurable. Ex. 9 at 133:8-15, 148:1-3.

STANDARD

Rule 702 requires the Court to act as a "gatekeeper" and "ensur[es] that an expert's testimony both rests on a reliable foundation and is relevant." *Daubert,* 509 U.S. at 597; *accord Shupe v. Rocket Cos.*, 2024 WL 4349171, *18 n.16 (E.D. Mich. Sept. 30, 2024) (applying Rule 702 at the class certification stage). The party proffering the expert must prove by a preponderance of the evidence that the expert's testimony is (a) helpful to the factfinder, (b) "based on sufficient facts or data," and (c) "the product of reliable principles and methods" that (d) have been "reliably applied" to the "facts of the case." Fed. R. Evid. 702 (amended 2023); *In re Onglyza*, 93 F.4th 339, 345 (6th Cir. 2024). *Daubert* and its progeny have articulated a variety of factors to test the reliability and helpfulness of scientific testimony. *Madej v. Maiden*, 951 F.3d 364, 369-70 (6th Cir. 2020). The Court must exclude testimony that fails Rule 702's requirements.

ARGUMENT

Dr. Cal's analysis is unreliable. Dr. Cal's opinions rest on his improper use of a modeling software that is designed to predict the future dispersion of airborne emissions, not to measure historical airborne odor dispersion, and is incapable of assessing whether an odor constitutes a nuisance, especially under Michigan law. Moreover, he completely failed to even consider the role of other odor sources which regulatory agencies have identified, including odors from KWRP. And to make matters worse, through his own admitted errors, he input corrupted, incorrect and greatly exaggerated data into the model--he admits this error renders his model inaccurate. His opinions do not pass must under *Daubert*.

I.   Dr. Cal Used an Unreliable Methodology: AERMOD

Dr. Cal's entire report rests on his *ipse dixit* that AERMOD is an appropriate tool for determining whether nuisance-level odors historically impacted residents within the Plaintiffs' proposed class area. But AERMOD is not intended to measure or model historical odor levels, let alone whether any odors at specific locations and specific times constituted a "nuisance." Ex. 3 at 21-22. In fact, "AERMOD has not been peer reviewed for odor applications." *Id.* at 22; *First Tenn. Bank Nat'l Ass'n v. Barreto*, 268 F.3d 319, 334 (6th Cir. 2001) (factors for assessing a methodology's reliability include whether it has "been subjected to peer review" or "generally accepted within the relevant field").

Importantly, AERMOD cannot determine if individual class members experienced nuisance-level odors. Ex. 3 at 21. Dr. Cal **concedes** that AERMOD is not suited for modeling multi-factor nuisance determinations, including the multi-factor odor nuisance standard employed by EGLE. Ex. 8 at 83:20-84:16, 87:16-21. Mr. Relwani explains that EGLE does not define an odor nuisance based simply on some numerical D/T or OU measurement. Ex. 2 at 7. Instead, EGLE analyzes multiple factors to determine if an odor constitutes a nuisance: examining the odor's (1)

6

intensity, (2) frequency, and (3) duration. *Id.* Dr. Cal ignored Michigan's regulatory standard. Instead, without any scientific rationale, he based his opinion solely on a nuisance threshold of 5 D/T, just because he considers 5 D/T a "fairly common" standard in other states. Ex. 8 at 86:6-23. In other Michigan nuisance cases where he serves as an expert, Dr. Cal opines that *7* D/T is the nuisance standard—not the *5* D/T he claims here. *See, e.g.*, Ex. 11 at 9. If Dr. Cal chose to apply his higher 7 D/T standard in this case, ***none*** of his modeled odor concentrations here would reach "nuisance" levels—even with his pervasive and serious his modeling errors.

Dr. Cal also ignores AERMOD's functional limitations. AERMOD assumes constant meteorological conditions over an hour. It cannot model shorter average durations of emission concentrations, such as three minutes. Ex. 3 at 22. Nonetheless, Dr. Cal manually jerry-rigged AERMOD's one-hour average to convert it into a shorter modeling period, *i.e.*, just a three-minute average. Ex. 1 at 12. But, as Dr. Cal admits, that conversion artificially ***inflates*** the modeled historical ground-level odor concentrations by ***60 percent***. Ex. 8 at 88:24-90:15; *see also Daubert*, 509 U.S. at 582 (courts evaluating a methodology's reliability should consider its error rate).

Further, AERMOD cannot discern the *source* of a nuisance odor experienced by a given class member. Although Dr. Cal claims that AERMOD can investigate "[m]ultiple sources … within the same model," Ex. 1 at 7, it is unsuited for modeling *multiple sources* of odor due to the synergetic effect of odorous compounds. Ex. 3 at 22-23; Ex. 2 at 11. "Odor concentrations from different sources cannot be added or averaged," so attempting to differentiate odor sources in AERMOD is "extremely difficult and not scientifically reliable." Ex. 3 at 22. Given the numerous known odor sources, especially H_2S odor sources, throughout the class area, *see supra* at 4, AERMOD is an inappropriate methodology—even in the absence of Dr. Cal's AERMOD errors. Dr. Cal's model blindly and baselessly assumes that all odors were from GPI. His failure to

consider or evaluate multiple other known odor sources renders his modeling completely unscientific and inadmissible.

    II.   **Dr. Cal's Odor Emission Rates Contain Serious Methodological Errors, Which Further Render His Report Unreliable and Compel Exclusion**

    A. *Dr. Cal admits he used inflated, made-up odor emission rates.*

Dr. Cal claimed he procured the odor emissions rate inputs necessary for his model from RKA's odor study. Ex. 1 at 10 (Table 2). But the RKA study did not contain *any* emission rate calculations. Ex. 3 at 21; Ex. 2 at 10. After reviewing Mr. Machado's report, Dr. Cal had no choice but to admit that the emission rates he used in his model are incorrect. Ex. 8 at 143:24-145:17. He further admits that fixing this error would **lower** his modeled ground-level odor concentrations of GPI's theoretical historical odor emissions. *Id.* at 145:18-146:3; 162:6-164:20. This error itself demonstrates Dr. Cal's opinions are unreliable and warrants exclusion under Rule 702.

    B. *Dr. Cal made another critical error calculating the odor concentration inputs that grossly exaggerated the odor concentrations.*

In calculating the odor concentrations used for his modeling, Dr. Cal took the odor concentration data from RKA's odor study (OU/scf) and "converted" it into a different measurement unit (OU/m^3). Dr. Cal's conversion, however, is methodologically and scientifically incorrect. This error alone drastically inflated Dr. Cal's modeled emissions by a **factor of 35.3**. *See* Ex. 3 at 19.

In its 2020 study, RKA used "standard cubic feet" ("scf") to measure odor intensity. For example, a measurement of "3 OU/scf" means that the trained olfactometer examiner who detected an odor in one scf of air had to dilute that sample with three scf of clean air to eradicate the odor – that is a three-to-one dilution ratio of clean air to odorous air. Dr. Cal, however, chose not to use RKA's scf measurement unit, and instead used cubic meters (m^3), an approximate 35.3-fold increase in air volume (i.e., one m^3 equals 35.3 scf). In "converting" RKA's measurements from

OU/scf, to OU/m^3, Dr. Cal committed a fundamental error: he multiplied both the quantity of air and the dilution ratio by 35.3. He should not have multiplied the dilution ratio at all—the ratio remains the same whether the measurement unit is scf or m^3.[3] See Figure 1 (excerpt of Dr. Cal's data, illustrating his conversion mistake).

Figure 1: Dr. Cal's Corrupted "Converted" Odor Measurements[4]

RKA's **ACTUAL** ODOR INTENSITY MEASUREMENT **Odor [OU/scf]**	DR. CAL'S **INCORRECT** ODOR INTENSITY CALCULATION **Odor [OU/m^3]**
41	1448
210	7416
76	2684
4	141
127	4485
94	3320
294	10382

As a result of this conversion error, Dr. Cal's modeling is "a factor of ***35.3 times too high.***" Ex. 3 at 19. For example, as shown in Figure 1, Dr. Cal inflated RKA's odor intensity measurements from GPI's clarifier from *41* OU/scf to *1448* OU/m^3. Based upon that incorrect data, Dr. Cal's AERMOD model claims that the majority of the proposed class area experiences

---

[3] A household analogy demonstrates the concept. A homeowner is mixing bleach as a cleaning solution using a one-quart bucket. The bottle instructs him to use a ratio of 75% water and 25% bleach (*i.e.*, 24 oz. water, 8 oz. bleach): this is a *dilution ratio* of three. If the homeowner wanted to mix a **one-gallon** bucket instead, he would maintain the same three-to-one dilution *ratio* (*i.e.*, 96 oz. water, 32 oz. bleach), even though a gallon is four times the volume of a quart. Whether using one gallon or a liter, the ***dilution ratio of three does not change.*** Similarly when expressing odor intensity in olfactometry, the same *ratio* of "clean" to "odorous" air applies, regardless of the volume of the unit of air used to determine the ratio (*e.g.*, whether it is a quart/scf of air or a gallon/m^3 of air). Odor intensity is a *ratio* measurement, not a measurement of any specific quantity of air.

[4] Ex. 3 at 11.

odors exceeding Dr. Cal's 5 D/T self-declared "community standard" of 5 D/T. Ex. 1 at 14 (showing D/T measurements ranging from 3 D/T to over 30 D/T throughout the entire class area).

Mr. Machado ran the same AERMOD model using the same inputs as Dr. Cal—except he corrected Dr. Cal's corrupted odor intensity values. Ex. 3 at 19-20. Mr. Machado's resulting AERMOD model shows that ***none** of the proposed class area* is exposed to odors exceeding Dr. Cal's 5 D/T community standard. *Id.* Only a fraction of the class area is exposed to a D/T exceeding 1, the highest intensity in the entire proposed class area being only 4 D/T (near GPI's property).

This stark contrast in modeling results when the correct data is used shows that Dr. Cal failed to reliably apply basic math and engineering principles, which renders his report unreliable. *See Zuzula v. ABB Power T&D Co.*, 267 F. Supp. 2d 703, 712 (E.D. Mich. 2003) (an opinion is reliable if it is "valid" according to the expert's discipline). Because Dr. Cal has not "employ[ed] the same level of intellectual rigor that characterizes" an air dispersion modeling expert, the Court must exclude his report and related opinions. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

III.   Dr. Cal Failed to Validate his Modeling

AERMOD users must validate their results to ensure the dispersion model is accurate: "The accuracy of a model is normally determined by an evaluation procedure which involves the comparison of model concentration estimates with ***measured air quality data***." Ex. 3 at 25 (citing EGLE Guidance). But Dr. Cal did not validate his model with any of the actual odor measurement data he had. *Cf. Greene v. Ledvance LLC*, 2023 WL 8635246, *11 (E.D. Tenn. Dec. 13, 2023) (excluding an expert who failed to validate his findings or test his hypotheses). If Dr. Cal had validated his model with available real-world data, he might have discovered his many errors. By skipping validation—a key step in AERMOD modeling—Dr. Cal had no chance of making that discovery.

In particular, Dr. Cal did not attempt to reconcile his model with the actual 2020 odor measurements on which he relied. The RKA odor study concluded that there were ***no off-site GPI-attributable odor events higher than 4 OU***, Ex. 2 at 6, yet Dr. Cal's model suggests that there could be a three-minute average (*i.e.,* three minutes sometime *once* within five years) of ***over 30 OU***, Ex. 1 at 14. The discrepancy between RKA's field results and Dr. Cal's modeling should have prompted him to double-check his errant modeling.

Dr. Cal's only attempt to "corroborate" his model using May 2021 H_2S readings from the Kalamazoo community monitors is flawed. None of these monitors are on GPI's property; instead, they are placed at various locations throughout the City of Kalamazoo and on KWRP's property (*e.g.*, Clarifier #8). *See* Ex. 1 at 16.[5] And these monitors cannot differentiate the *source* of any H_2S they detect. Ex. 8 at 93:23-96:22, 115:22-117:9, 120:1-121:11 (Dr. Cal acknowledging same). Dr. Cal's reliance on the 2021 data from these community monitors to "corroborate" his model based on 2020 data from GPI's facility is therefore pointless. This is particularly true for the six monitors ***on KWRP's property and known odor sources***. Dr. Cal ***conceded*** that he did not know whether the monitors' measurements reflected H_2S from GPI or another source. Ex. 8 at 116:18-117:9. His opinion that the 2021 Kalamazoo monitoring data shows "that residents throughout the proposed class area were exposed to elevated H_2S emissions from the GPI Facility," Ex. 1 at 12, has never been tested, is fundamentally flawed, and is unreliable. It epitomizes impermissible *ipse dixit*.

Dr. Cal's failure to validate his work, which might have enabled him to discover his admitted errors, further belies the reliability of his methodology and opinions.

---

[5] GPI has its own H_2S -monitoring network on its property.

IV.   Dr. Cal Relied on Data Insufficient for Air Dispersion Modeling and Ignored Relevant Facts

Dr. Cal used RKA's odor study data which was unintended for air dispersion modeling—the methodological equivalent of forcing a square peg into a round hole. Further, he defied the scientific method and failed to test his theory with facts related to GPI's operations. *In re Onglyza*, 93 F.4th at 347 (experts cannot cherry-pick their sources).

Dr. Cal's reliance on RKA's odor study was improper because its data is not sufficient for use in air modeling. As explained by the study's principal engineer, Mr. Relwani, the odor unit measurements taken on GPI's property "were not intended to represent emission rates from sources … and using them as such is improper." Ex. 2 at 10; Ex. 3 at 15 (Mr. Machado explaining that using RKA's measurements "for modeling purposes … is flawed in numerous ways"). Dr. Cal took RKA's static odor measurements and somehow extrapolated those into a *rate* at which GPI's facility had emitted odors ("emission rates," as explained above). Simply put, AERMOD cannot utilize RKA's static odor measurements to reliably model an historical theoretical emission rate, let alone a reliable model of how would those theoretical emission would have dispersed. *See supra* at 4. Because Dr. Cal's analysis is not "valid" according to the principles of odor science of air modeling, his opinions are unreliable. *See Zuzula*, 267 F. Supp. 2d at 712.

Dr. Cal's failure to test his model against other available reports and data only compounds his inappropriate use of RKA's odor study data. Despite numerous studies identifying alternative H_2S sources and odors near GPI, Dr. Cal failed to review any data that undermines his skeletal conclusions that GPI was the sole-source of H_2S odors. *E.g.*, Ex. 8 at 93:13-94:2. Notably, at least one court has excluded Dr. Cal for this ***same methodological failure***. *Sines*, 2023 WL 3841741, at *8 (excluding Dr. Cal because he did "not investigate[] whether odors … were generated by other sources").

Also, Dr. Cal either did not read the class member data sheets Plaintiffs' counsel collected to justify this lawsuit, or chose to ignore them. Dr. Cal agrees that if class members reported odors on the data sheets other than "rotten eggs" (H_2S's typical odor profile), those reports would undermine his model. Ex. 8 at 49:23-50:13. In reality, ***many*** class member data sheets describe odors other than rotten eggs, including sewage, ammonia, glue, rotten cabbage, *etc. See* Ex. 7 (collecting examples of odor descriptions). Dr. Cal admits that several of these odors are incompatible with H_2S or indicate alternative sources. Ex. 8 at 52:24-53:6, 54:9-17, 55:4-12; *In re Onglyza*, 93 F.4th at 347 (affirming exclusion where expert did not "reliably apply" his methodology).

Finally, Dr. Cal did not review ***any*** facts related to GPI's odor mitigation methods, and made the materially untrue assumption that GPI's operations, and therefore its potential for fugitive odors, remained the same from 2019-2023. Ex. 8 at 74:3-13, 77:10-16, 80:9-13; *see, e.g.*, Ex. 12 (describing some of GPI's methods). His failure to consider GPI's odor mitigation methods "lead to a substantial overestimation of emissions" throughout the modeled period. Ex. 3 at 14. Even Dr. Cal ***admitted*** GPI's operational changes would impact his model. Ex. 8 at 80:14-23; *see also Sines*, 2023 WL 3841741, at *8 (excluding Dr. Cal because he could not "run an accurate AERMOD model" without "information about odor control changes").

Dr. Cal's failure to consider data that tests his hypotheses "undermines principles of the scientific method and is a quintessential example of applying methodologies … in an unreliable fashion." *In re Onglyza*, 93 F.4th at 347 (quotation omitted). And his assumptions that are "based on a fictitious set of facts," *i.e.*, GPI's operations from 2019-2023, "[are] just as unreliable as [conducting] no research at all." *Kilgore v. United States*, 2023 WL 2898415, *5 (E.D. Ky. Apr. 11, 2023) (quotation omitted).

V.   Because Dr. Cal's Opinions Are Unreliable and Irrelevant, They Are Unhelpful to the Court's Class Certification Analysis

For the same reasons his opinions are unreliable, they cannot assist the Court in resolving the issues raised by Plaintiffs' Motion for Class Certification. Dr. Cal ***admits*** that his theoretical historical modeling is inaccurate. *See supra* at 3, 8. Similarly, Dr. Cal's methodology cannot provide class-wide proof of Plaintiffs' claims. Dr. Cal admits that AERMOD is unfit for Michigan's multi-factor nuisance standard. *See supra* at 6-7. His results (as skewed as they are) showing a three-minute maximum peak of odors occurring ***sometime*** within five years are insufficient to prove anyone in the proposed class, let alone the entire class, suffered odors of sufficient intensity, frequency, and duration to constitute a nuisance. Ex. 2 at 10. He did not model or even consider the impact from known alternative H_2S odor sources throughout the area—nor did he provide confidence that he could in the future. *Sines*, 2023 WL 3841741, *10 (Cal's "speculative say-so" was insufficient to prove he could measure the "total impact from multiple sources"). Because Dr. Cal's report cannot assist the Court decide ***any*** portion of Plaintiffs' motion, the Court should exclude it as unhelpful under Rule 702.

CONCLUSION

For the reasons stated above and in its Opposition to Plaintiff's Motion for Class Certification, GPI requests the Court grant the motion, exclude Dr. Cal and his opinions, and grant all other appropriate relief.

Dated: October 25, 2024

Respectfully submitted,

BARNES & THORNBURG LLP

Attorneys for Defendant Graphic Packaging International, LLC

/s/ Charles M. Denton
Charles M. Denton (P33269)
Anthony C. Sallah (P84136)
171 Monroe Avenue, NW, Suite 1000
Grand Rapids, MI 49503
Phone: (616) 742-3930
Facsimile: (616) 742-3999
cdenton@btlaw.com
asallah@btlaw.com

-and-

Mark P. Miller
One North Wacker Drive, Suite 4400
Chicago, IL 60606-2833
Phone: (312) 357-1313
Facsimile: (312) 759-5646
mmiller@btlaw.com

15

CERTIFICATE OF SERVICE

I hereby certify that on October 25, 2024 a copy of the foregoing document was filed electronically and served by email to all parties by operation of the Court's electronic filing system or by mail to anyone unable to accept electronic filing as indicated on the Notice of Electronic Filing.

BARNES & THORNBURG LLP

Dated: October 25, 2024

/s/ Charles M. Denton
Charles M. Denton (P33269)
Attorney for Defendant Graphic Packaging International, LLC